A SYSTEM AND A METHOD FOR COMMUNICATION BETWEEN AN ICE AND A PRODUCTION MICROCONTROLLER WHILE IN A HALT STATE

5   ABSTRACT OF THE DISCLOSURE

A system where a production microcontroller is partially copied in a FPGA of an ICE to form a virtual microcontroller. The virtual microcontroller and the production microcontroller simultaneously and independently run a microcontroller code to be debugged at a high frequency. The debugging logic can substantially reside in the ICE and the ICE can performs all debugging functions. The debug interface, residing in the production microcontroller, can enable the production microcontroller to communicate with the ICE in low frequencies. The production microcontroller may request the ICE to lower its frequency when the production microcontroller encounters a halt due to outside events. A user may command resumption of the operation of both the production microcontroller and the virtual microcontroller when debugging of the codes is completed.